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Notice of Allowability	Application No.	Applicant(s)	
	10/700,245	WANG ET AL.	
	Examiner	Art Unit	
	Charlie Peng	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1. ☒ This communication is responsive to remarks filed 21 December 2005.
- 2. ☒ The allowed claim(s) is/are 1-20.
- 3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 - 1. ☐ Certified copies of the priority documents have been received.
 - 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

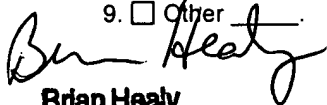
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

- 4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 - 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
- 6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- 1. ☒ Notice of References Cited (PTO-892)
- 2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
 Paper No./Mail Date 12/20/2005
- 4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 5. ☐ Notice of Informal Patent Application (PTO-152)
- 6. ☐ Interview Summary (PTO-413),
 Paper No./Mail Date _____.
- 7. ☐ Examiner's Amendment/Comment
- 8. ☒ Examiner's Statement of Reasons for Allowance
- 9. ☐ Other _____


Brian Healy
Primary Examiner

DETAILED ACTION

Reasons for Allowance

Claims 1-3, 6-8, and 12 are allowed. The following is an examiner's statement of reasons for allowance:

Claims 1-3 and 6-8 teach semiconductor modulators and claim 12 teaches a method of using the same. Applicant's argument filed on 21 December 2005 is persuasive. Fallahi et al. (previously cited) teach an optical p-i-n structure with grating on opposite of a waveguide except for an RF signal applied on electrodes and the gratings, wherein gratings slow an optical wave to match its speed to the speed of the RF signal. U.S. Patent 6,900,920 to Chang-Hasnain et al. teaches using a grating 62 to create slow-light via photonic bandgap engineering and the slow-down factor is controlled by applying a voltage or current. However, the application of Chang-Hasnain's concept is substantially different from Fallahi due to difference in their respective optical waveguides structures. Other relevant prior art teach slowing down waveguide but use no grating, gratings in-line with waveguides, or grating placed upon waveguides. (See form PTO-892 for references cited) It would not have been obvious or possible to modify Fallahi with Chang-Hasnain or the other optical wave slow-down methods. It is the examiner's opinion that the prior art of record, taken alone or in combination, fails to disclose or render obvious first and second gratings slowing the optical wave to match its speed to the speed of the RF signal in the electrodes, in combination with the rest of the limitations of the base claim.

Claims 4, 5, 9-11, and 13-20 are allowed as dependent claims of allowed claims.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 9 am - 6 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charlie Peng
March 1, 2006


Brian Healy
Primary Examiner